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Chervak et al.

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(54) **APPARATUS FOR FASTENING A LID TO A CONTAINER**

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(58) **Field of Classification Search** **81/3.39, 81/3.2, 3.25, 3.31, 3.32, 3.33, 3.36, 3.4**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

80,583 A	8/1868	Allard	
352,659 A	11/1886	Petersen	
1,821,194 A	9/1931	Wilcox	
3,159,064 A	12/1964	Woloszyn	
3,812,742 A *	5/1974	Polasek	81/3.32
3,971,188 A	7/1976	Cawrse	
4,358,970 A	11/1982	Jacobson	
4,569,281 A	2/1986	Woods	
D286,734 S	11/1986	Furman	
4,852,431 A	8/1989	Frangel	
5,054,266 A	10/1991	Mello et al.	
5,165,310 A *	11/1992	Heinrich	81/3.4
6,263,761 B1	7/2001	Ryder	
6,651,531 B1	11/2003	Thorton	

* cited by examiner

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(57) **ABSTRACT**

The present invention is a portable securing apparatus for fastening and unfastening a lid to a container. The apparatus minimizes or prevents health risks of medical conditions associated with repetitive and cumulative motions by minimizing or preventing repetitive motions performed by an individual. The apparatus includes a base and a balancer configured to hold a rotational drive mechanism. The base provides support for the container by allowing the container to rest thereon in an upright position. The balancer is connected to the base and is configured to hold the rotational drive mechanism. The balancer provides for movement of the rotational drive mechanism to engage the container lid.

17 Claims, 5 Drawing Sheets

